FIG. 1

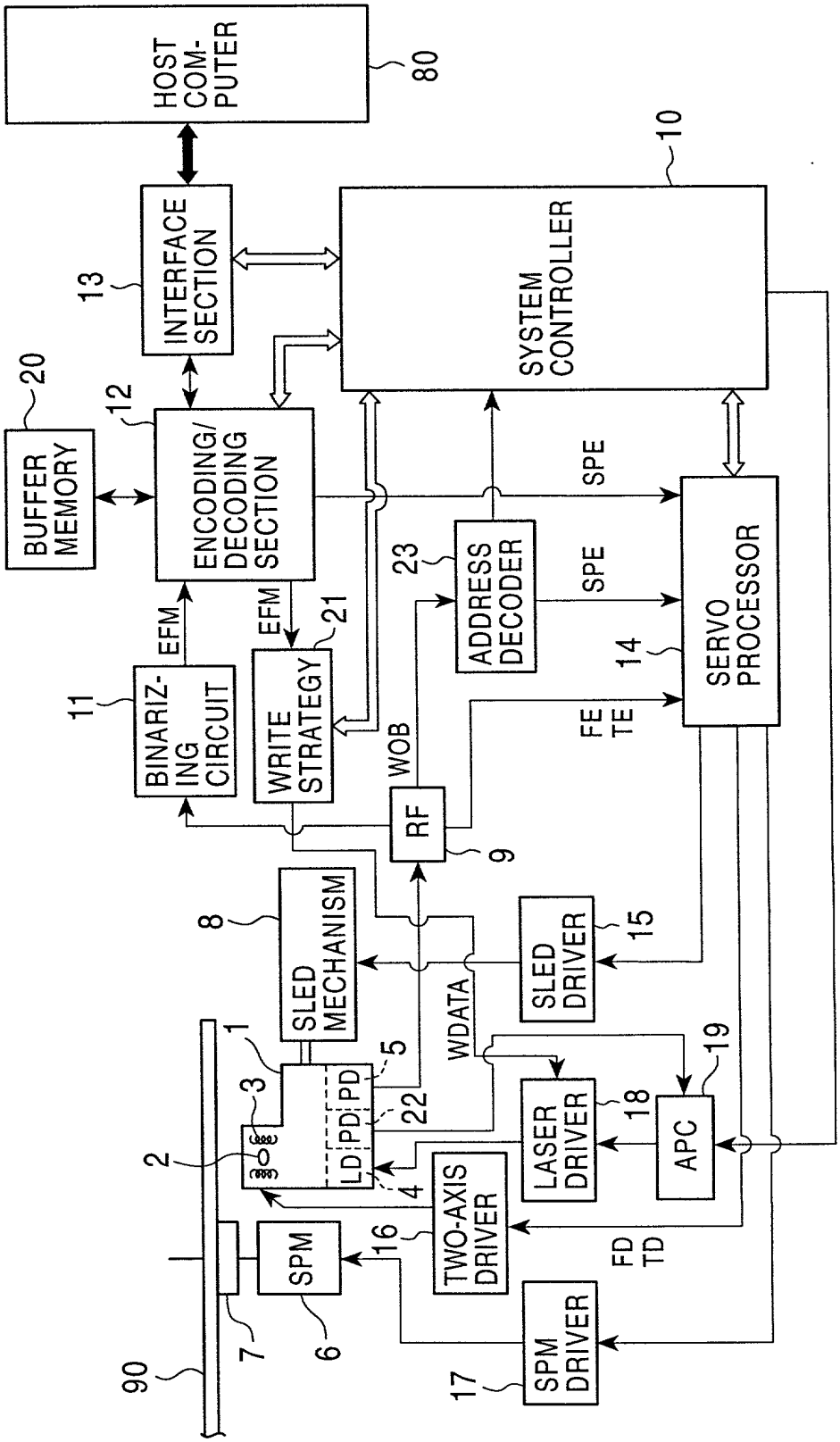

HOST COM-PUTER
80
INTERFACE SECTION
13
SYSTEM CONTROLLER
10
BUFFER MEMORY
20
ENCODING/ DECODING SECTION
12
SPE
ADDRESS DECODER
23
SERVO PROCESSOR
14
EFM
BINARIZ-ING CIRCUIT
11
WRITE STRATEGY
21
WOB
FE
TE
RF
9
SLED MECHANISM
8
SLED DRIVER
15
WDATA
LASER DRIVER
18
APC
19
LD
PD
PD
5
22
3
2
4
TWO-AXIS DRIVER
16
FD
TD
SPM
6
7
90
SPM DRIVER
17

FIG. 2

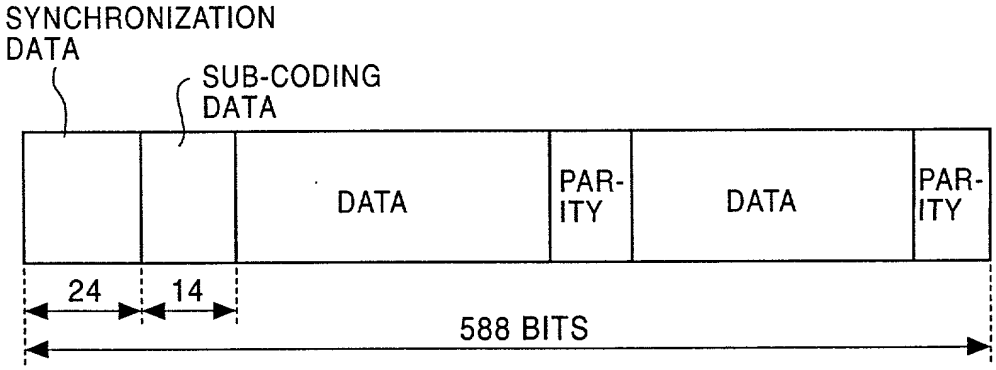


FIG. 3A

FRAME	SUB-CODING FRAME							
98n + 1	SYNCHRONIZATION PATTERN							
98n + 2	SYNCHRONIZATION PATTERN							
98n + 3	P1	Q1	R1	S1	T1	U1	V1	W1
98n + 4	P2	Q2	R2	S2	T2	U2	V2	W2
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
98n + 97	P95	Q95	R95	S95	T95	U95	V95	W95
98n + 98	P96	Q96	R96	S96	T96	U96	V96	W96
98(n+1) + 1								

FIG. 3B

Q1～Q4	Q5～Q8	Q9 ～ Q80	Q81～Q96
CONTROL DATA	ADR	SUB Q DATA	CRC

FIG. 4

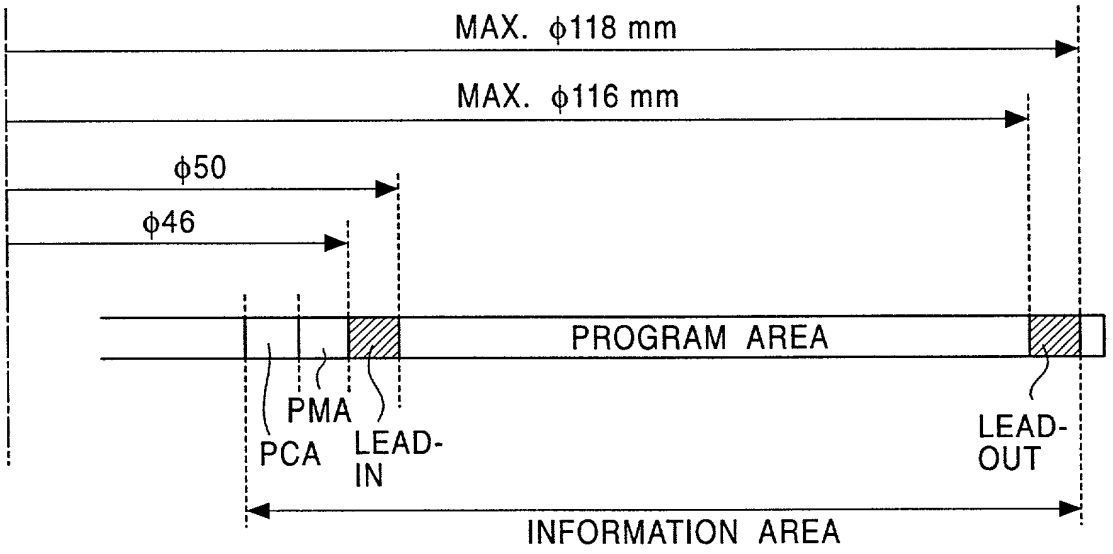

MAX. φ118 mm
MAX. φ116 mm
φ50
φ46
PROGRAM AREA
PCA
PMA
LEAD-IN
LEAD-OUT
INFORMATION AREA

FIG. 5

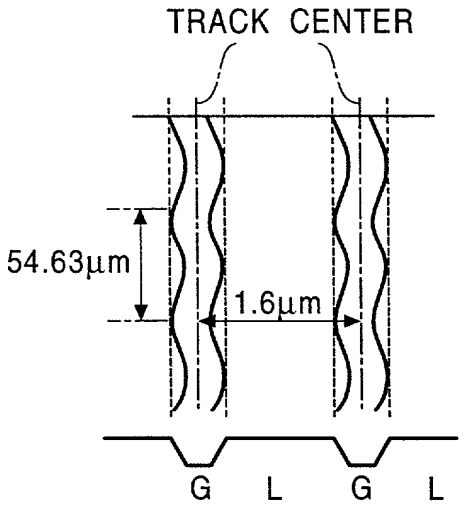

TRACK CENTER
54.63μm
1.6μm
G
L
G
L

FIG. 6

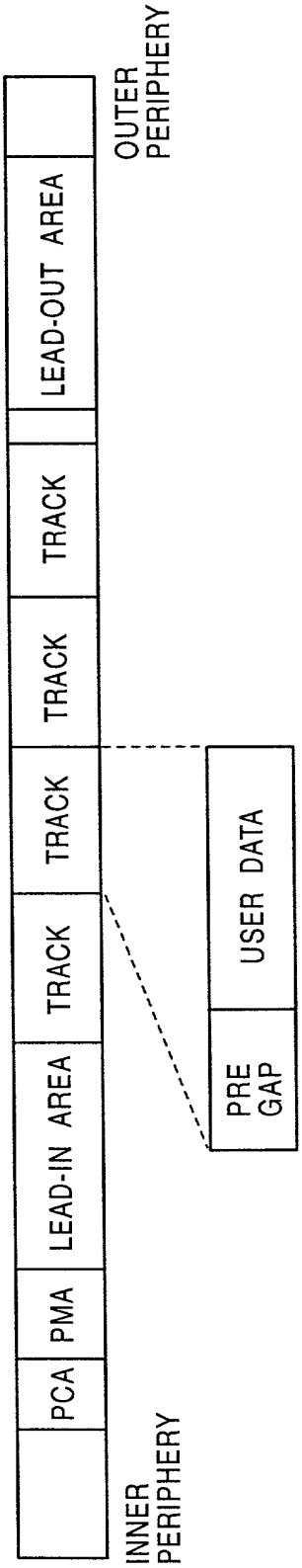

INNER PERIPHERY
PCA
PMA
LEAD-IN AREA
TRACK
TRACK
TRACK
TRACK
LEAD-OUT AREA
OUTER PERIPHERY
PRE GAP
USER DATA

FIG. 7

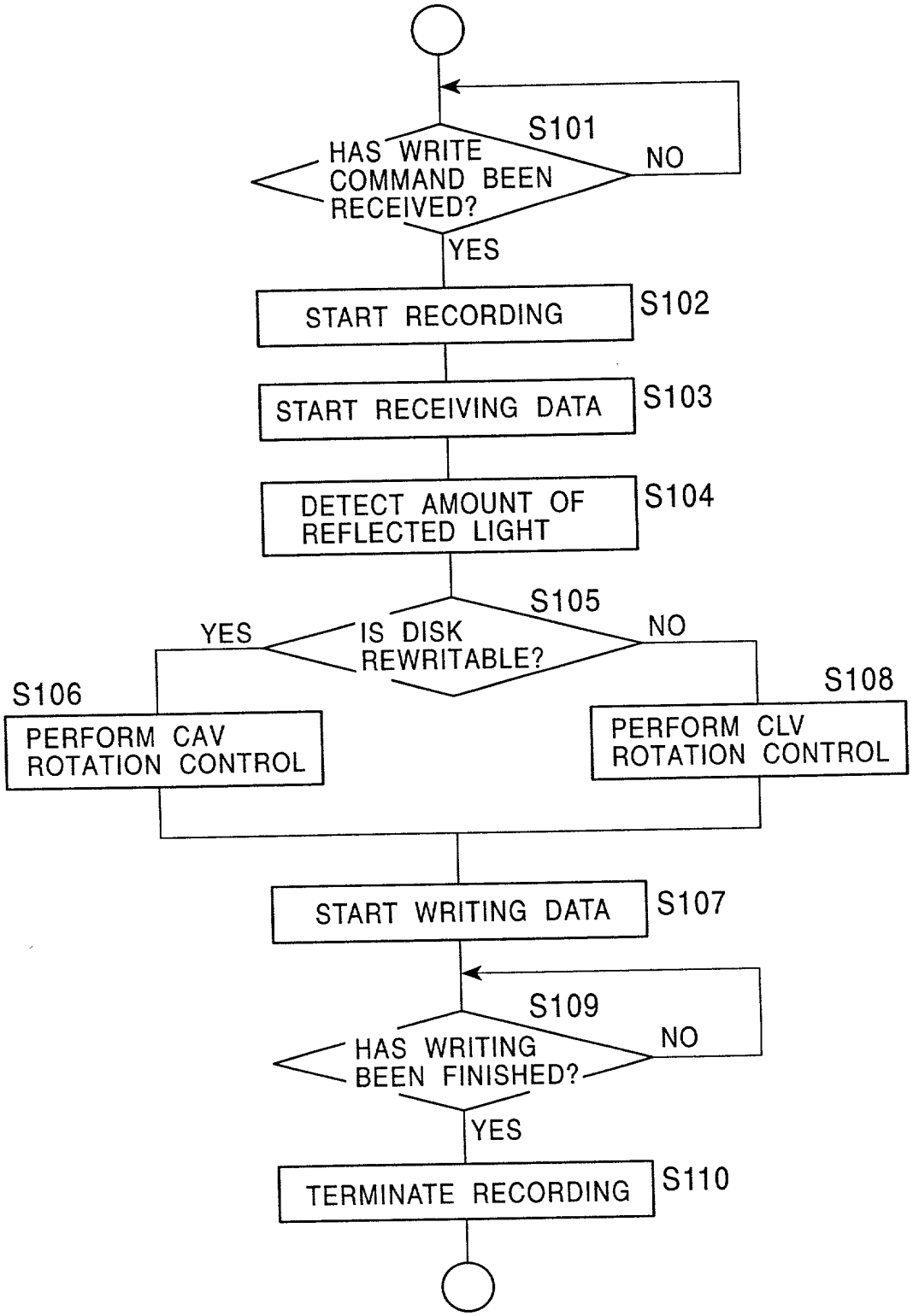
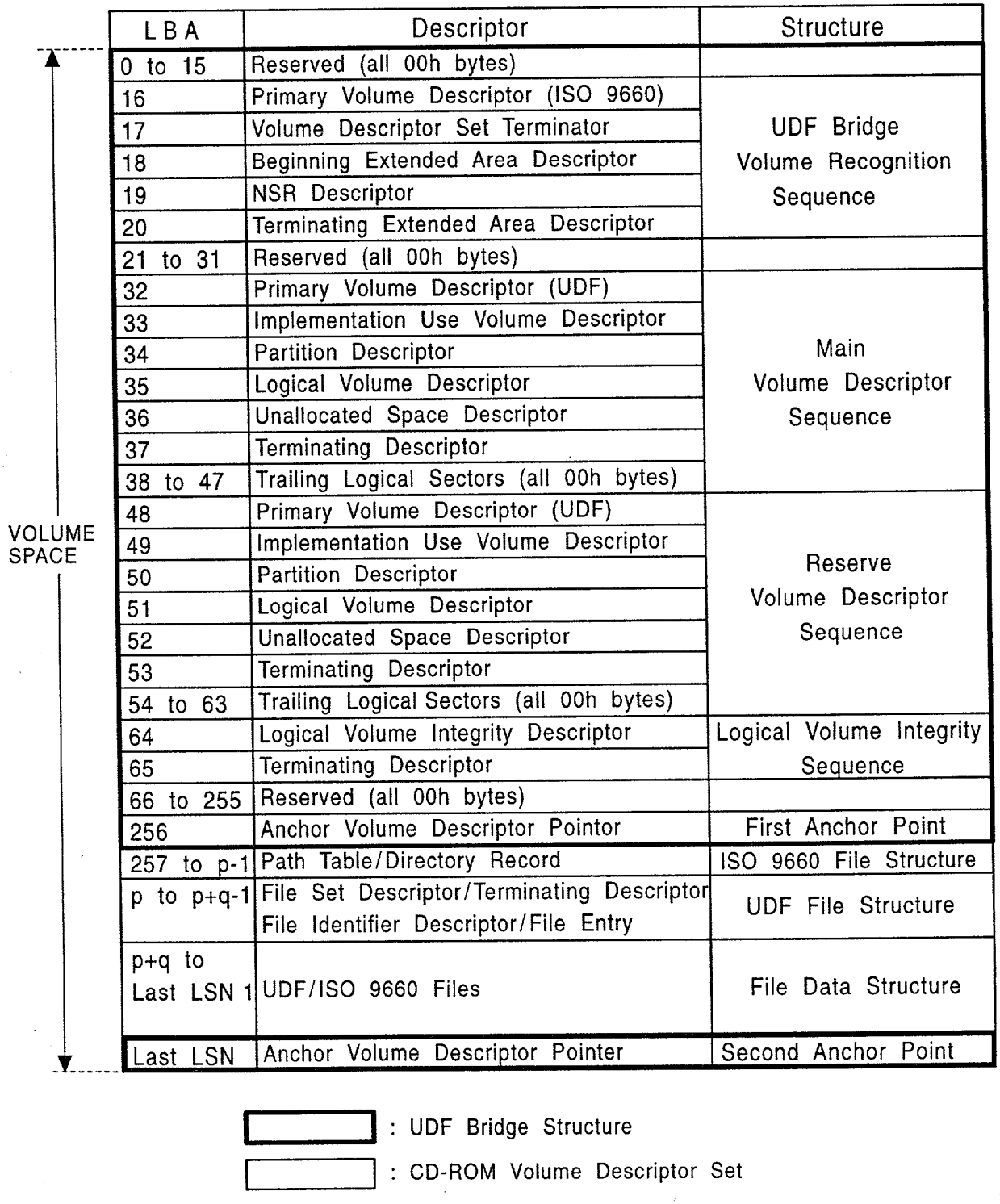

S101
HAS WRITE COMMAND BEEN RECEIVED?
NO
YES
START RECORDING
S102
START RECEIVING DATA
S103
DETECT AMOUNT OF REFLECTED LIGHT
S104
S105
IS DISK REWRITABLE?
YES
NO
S106
PERFORM CAV ROTATION CONTROL
S108
PERFORM CLV ROTATION CONTROL
START WRITING DATA
S107
S109
HAS WRITING BEEN FINISHED?
NO
YES
TERMINATE RECORDING
S110

FIG. 8



LBA	Descriptor	Structure
0 to 15	Reserved (all 00h bytes)	
16	Primary Volume Descriptor (ISO 9660)	UDF Bridge Volume Recognition Sequence
17	Volume Descriptor Set Terminator	
18	Beginning Extended Area Descriptor	
19	NSR Descriptor	
20	Terminating Extended Area Descriptor	
21 to 31	Reserved (all 00h bytes)	
32	Primary Volume Descriptor (UDF)	Main Volume Descriptor Sequence
33	Implementation Use Volume Descriptor	
34	Partition Descriptor	
35	Logical Volume Descriptor	
36	Unallocated Space Descriptor	
37	Terminating Descriptor	
38 to 47	Trailing Logical Sectors (all 00h bytes)	
48	Primary Volume Descriptor (UDF)	Reserve Volume Descriptor Sequence
49	Implementation Use Volume Descriptor	
50	Partition Descriptor	
51	Logical Volume Descriptor	
52	Unallocated Space Descriptor	
53	Terminating Descriptor	
54 to 63	Trailing Logical Sectors (all 00h bytes)	
64	Logical Volume Integrity Descriptor	Logical Volume Integrity Sequence
65	Terminating Descriptor	
66 to 255	Reserved (all 00h bytes)	
256	Anchor Volume Descriptor Pointor	First Anchor Point
257 to p-1	Path Table/Directory Record	ISO 9660 File Structure
p to p+q-1	File Set Descriptor/Terminating Descriptor File Identifier Descriptor/File Entry	UDF File Structure
p+q to Last LSN 1	UDF/ISO 9660 Files	File Data Structure
Last LSN	Anchor Volume Descriptor Pointer	Second Anchor Point

: UDF Bridge Structure

: CD-ROM Volume Descriptor Set

FIG. 9

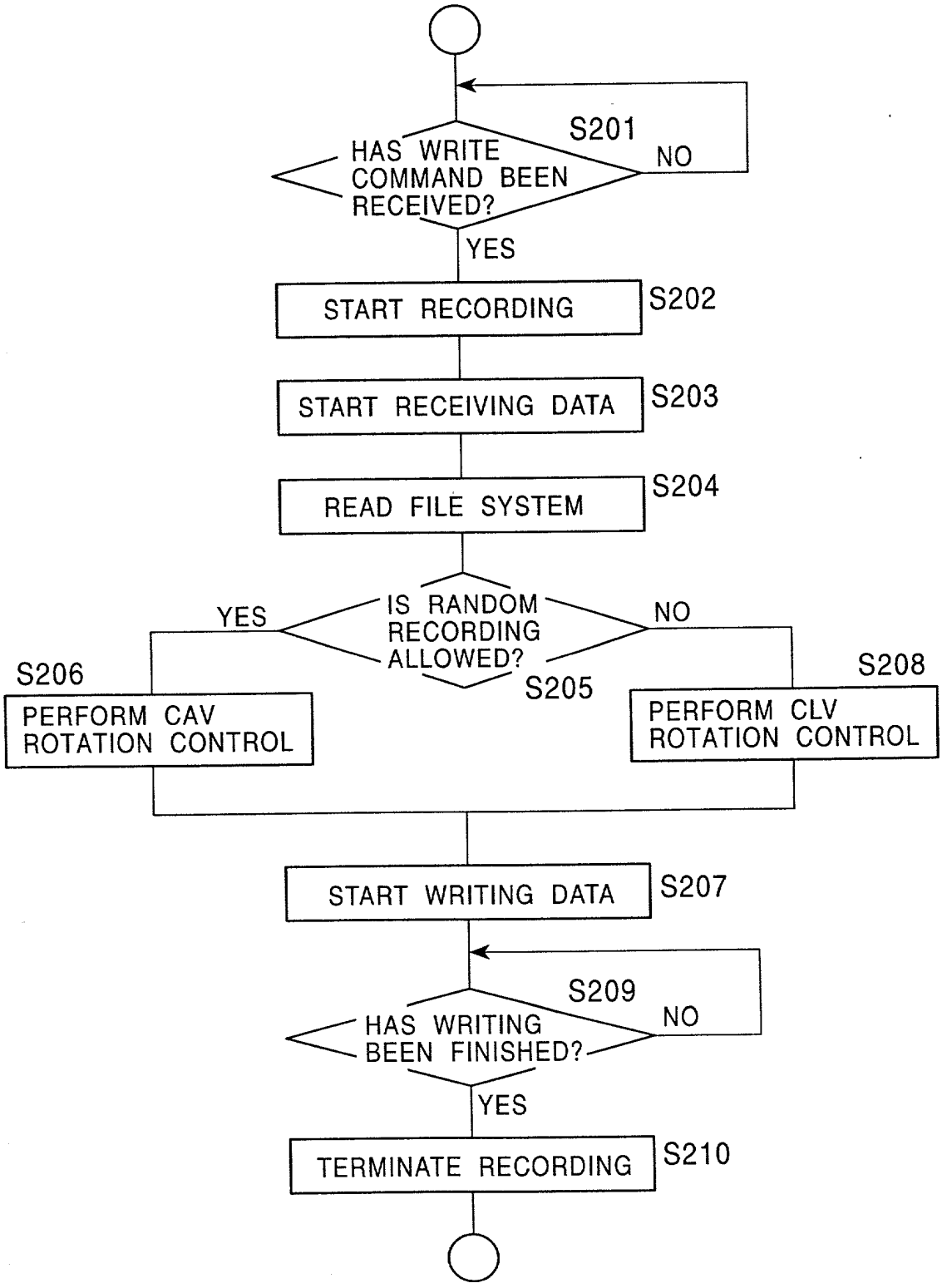

S201
HAS WRITE COMMAND BEEN RECEIVED?
NO
YES
START RECORDING
S202
START RECEIVING DATA
S203
READ FILE SYSTEM
S204
IS RANDOM RECORDING ALLOWED?
S205
YES
NO
S206
PERFORM CAV ROTATION CONTROL
S208
PERFORM CLV ROTATION CONTROL
START WRITING DATA
S207
S209
HAS WRITING BEEN FINISHED?
NO
YES
TERMINATE RECORDING
S210

FIG. 10A

FIG. 10B

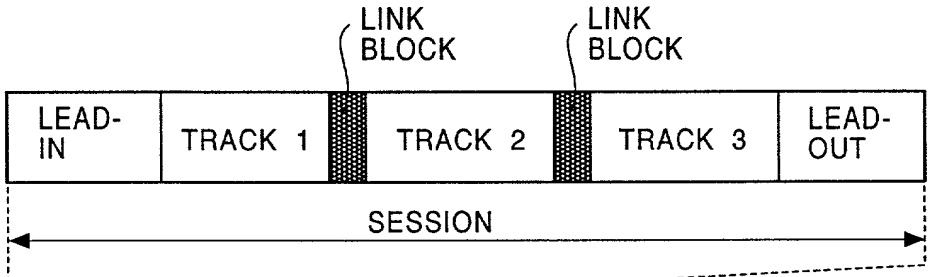


FIG. 10C

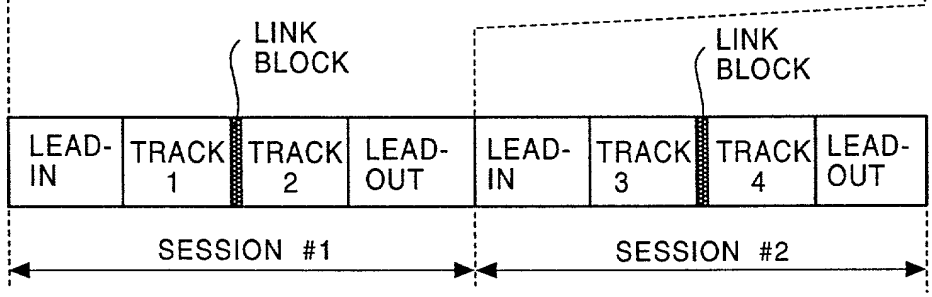
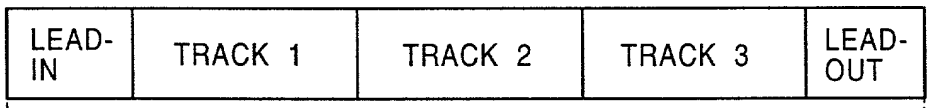
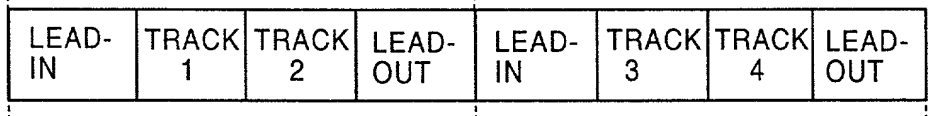


FIG. 10D



SESSION

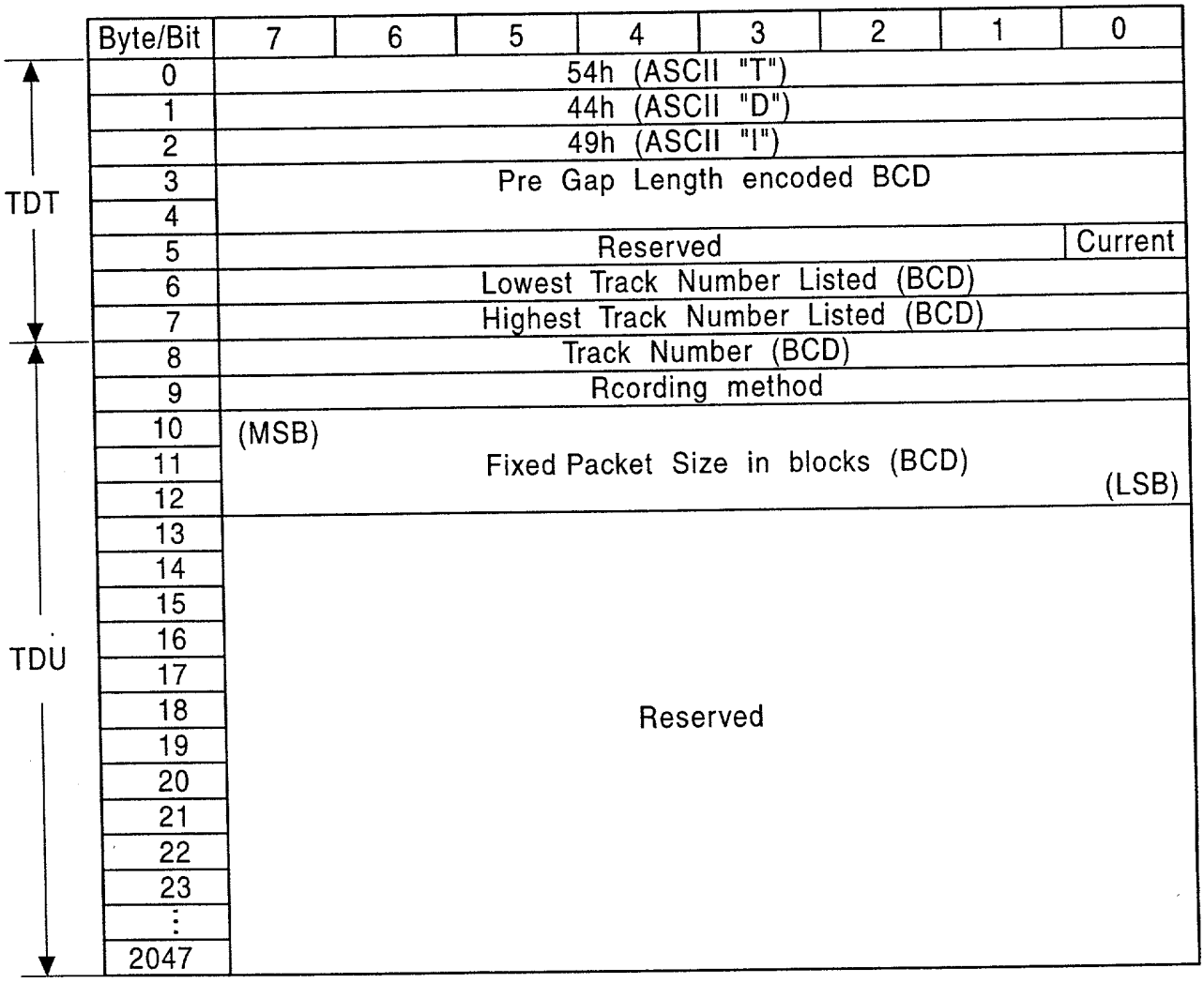
FIG. 10E



SESSION #1 SESSION #2

EP 0 715 309 A2

FIG. 11



	Byte/Bit	7	6	5	4	3	2	1	0
TDT	0	54h (ASCII "T")							
	1	44h (ASCII "D")							
	2	49h (ASCII "I")							
	3	Pre Gap Length encoded BCD							
	4								
	5	Reserved							Current
	6	Lowest Track Number Listed (BCD)							
	7	Highest Track Number Listed (BCD)							
TDU	8	Track Number (BCD)							
	9	Rcording method							
	10	(MSB) Fixed Packet Size in blocks (BCD)							
	11								
	12								(LSB)
	13	Reserved							
	14								
	15								
	16								
	17								
	18								
	19								
	20								
	21								
	22								
	23								
	⋮								
	2047								

FIG. 12

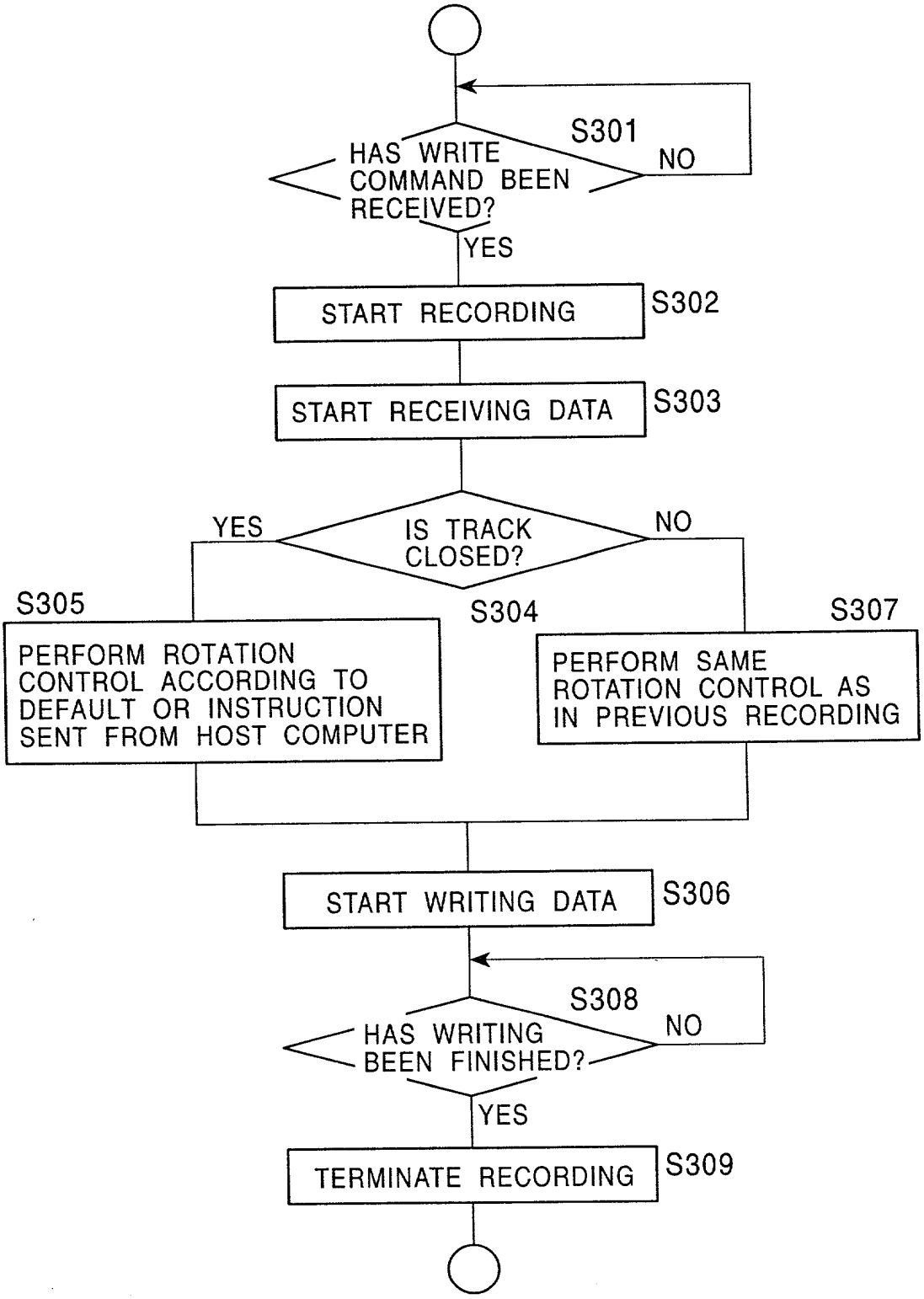

S301
HAS WRITE COMMAND BEEN RECEIVED?
NO
YES
START RECORDING
S302
START RECEIVING DATA
S303
YES
IS TRACK CLOSED?
NO
S305
PERFORM ROTATION CONTROL ACCORDING TO DEFAULT OR INSTRUCTION SENT FROM HOST COMPUTER
S304
S307
PERFORM SAME ROTATION CONTROL AS IN PREVIOUS RECORDING
START WRITING DATA
S306
S308
HAS WRITING BEEN FINISHED?
NO
YES
TERMINATE RECORDING
S309

FIG. 13A

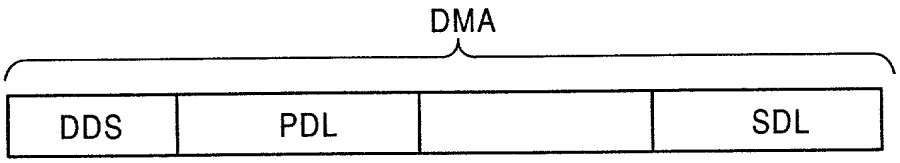


FIG. 13B

PDL ENTRY COUNT
dfap1
dfap2
dfap3
dfap4
⋮

FIG. 13C

SDL ENTRY COUNT	
dfas1	rpa1
dfas2	rpa2
dfas3	rpa3
dfas4	rpa4
⋮	⋮

FIG. 14

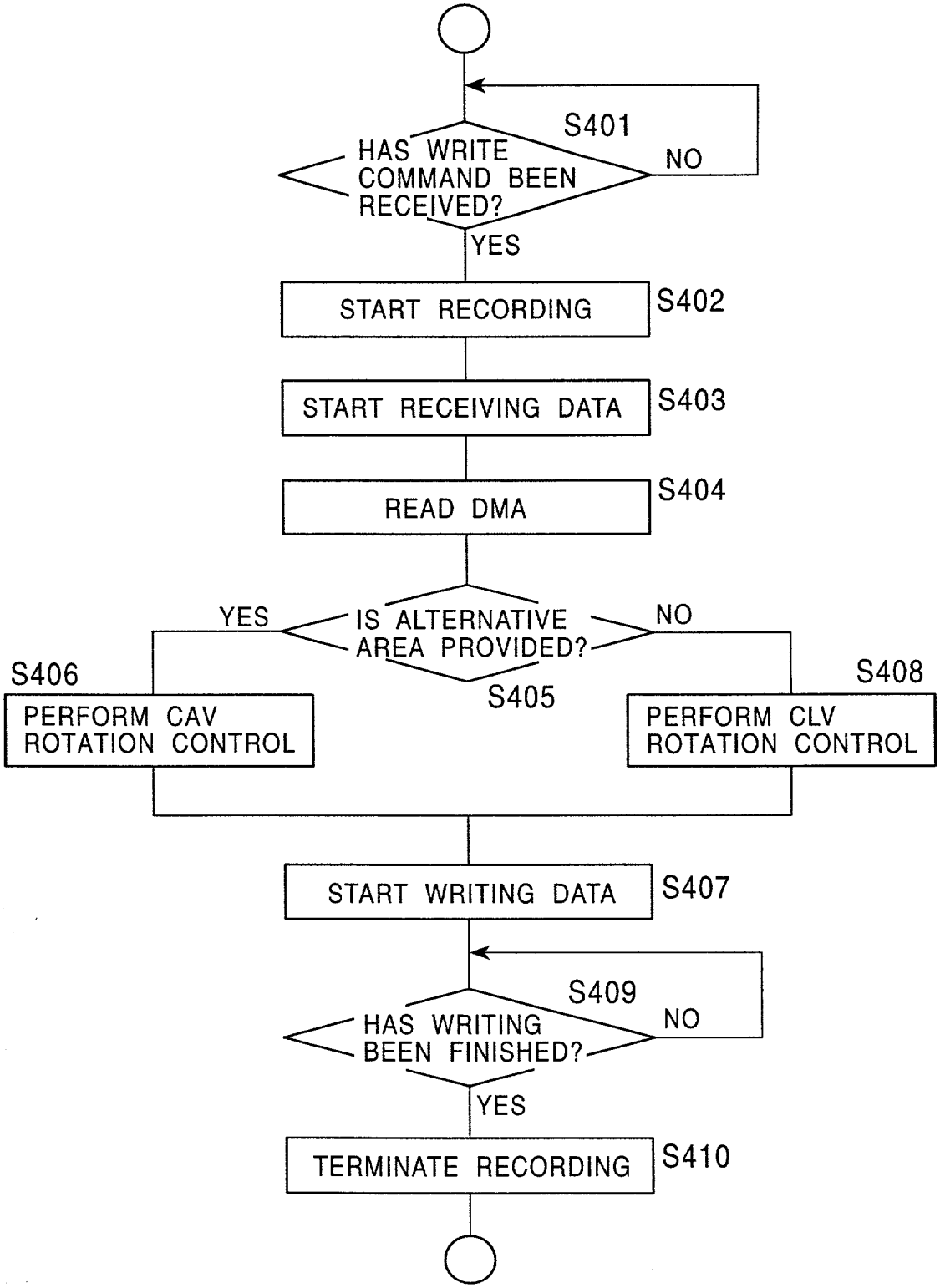

S401
HAS WRITE COMMAND BEEN RECEIVED?
NO
YES
START RECORDING
S402
START RECEIVING DATA
S403
READ DMA
S404
YES
IS ALTERNATIVE AREA PROVIDED?
NO
S405
S406
PERFORM CAV ROTATION CONTROL
S408
PERFORM CLV ROTATION CONTROL
START WRITING DATA
S407
S409
HAS WRITING BEEN FINISHED?
NO
YES
TERMINATE RECORDING
S410

FIG. 15

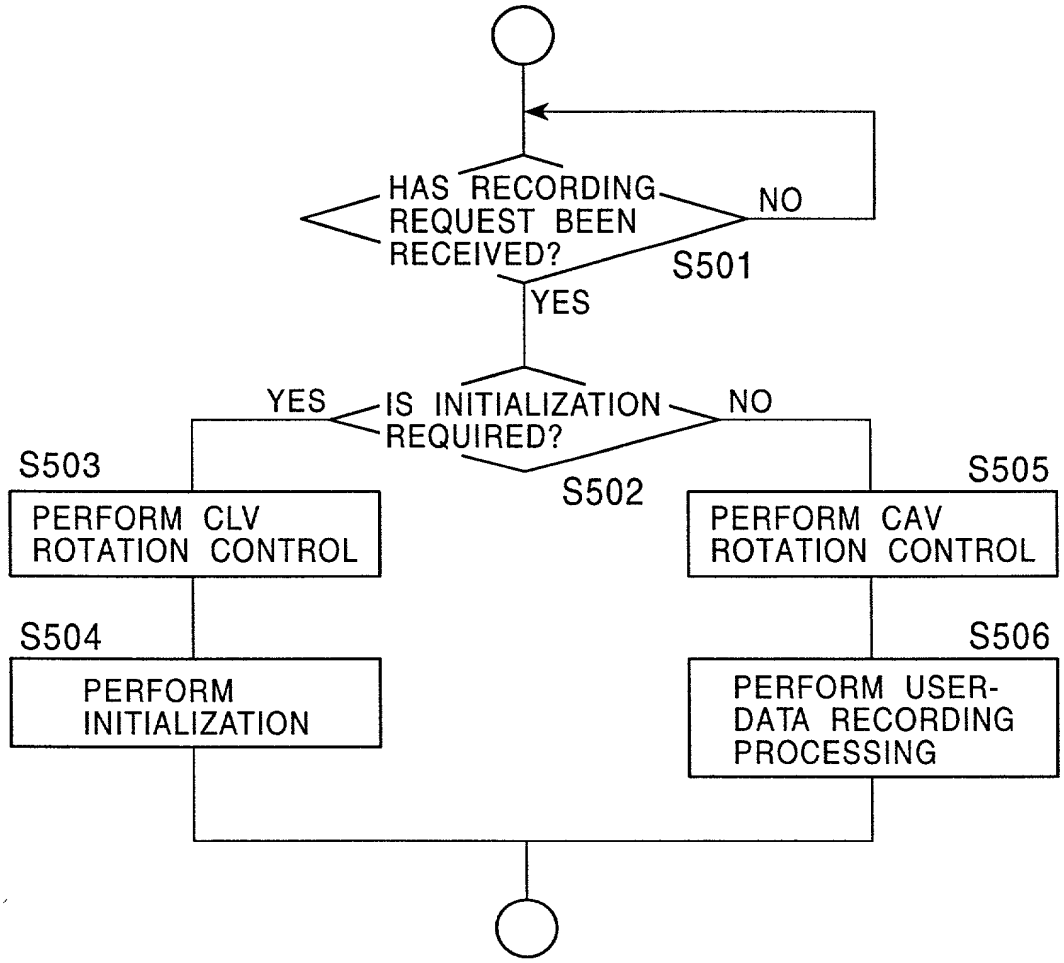
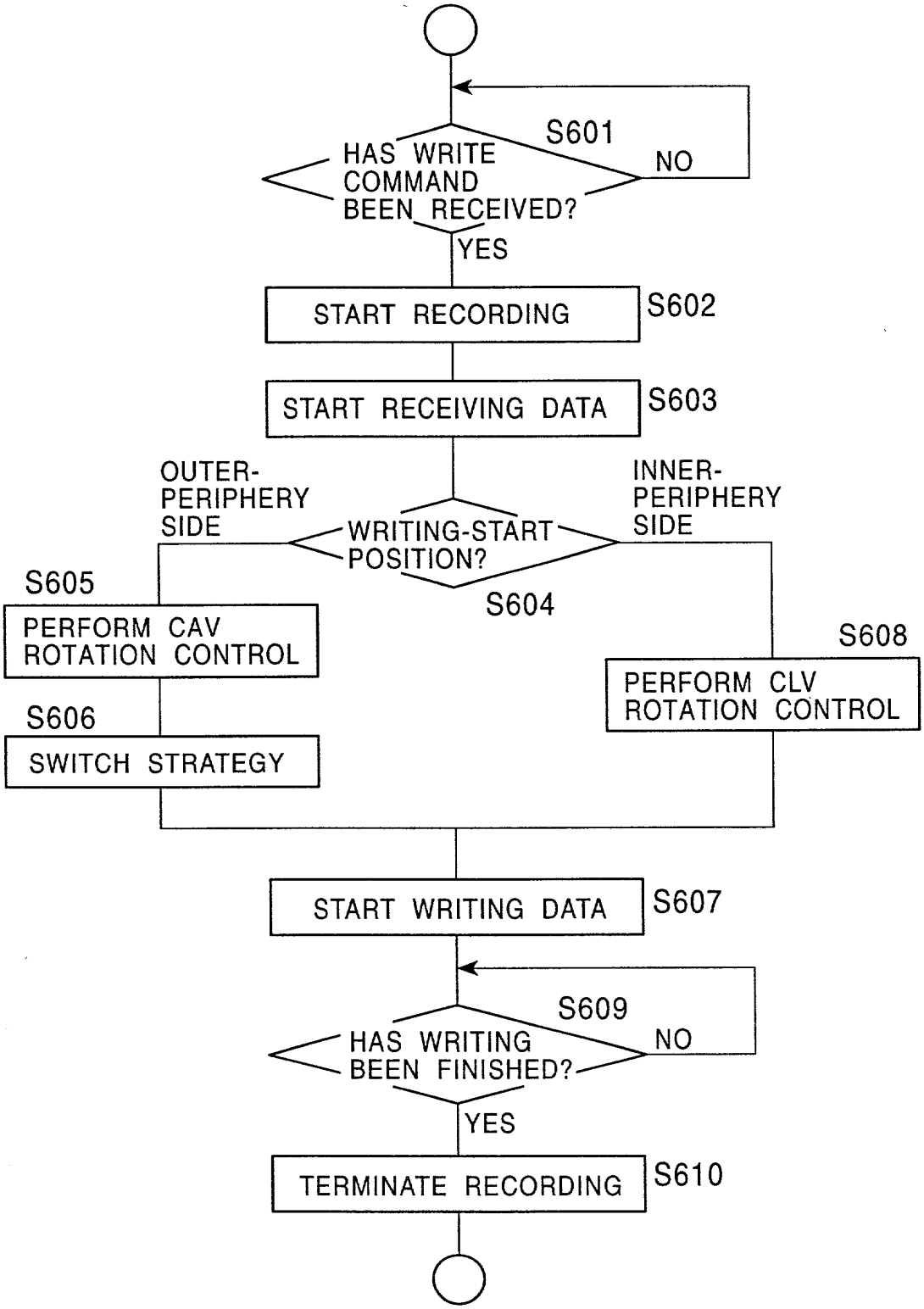

HAS RECORDING REQUEST BEEN RECEIVED?
NO
S501
YES
IS INITIALIZATION REQUIRED?
YES
NO
S502
S503
PERFORM CLV ROTATION CONTROL
S504
PERFORM INITIALIZATION
S505
PERFORM CAV ROTATION CONTROL
S506
PERFORM USER-DATA RECORDING PROCESSING

FIG. 16


S601
HAS WRITE COMMAND BEEN RECEIVED?
NO
YES
START RECORDING
S602
START RECEIVING DATA
S603
OUTER-PERIPHERY SIDE
WRITING-START POSITION?
INNER-PERIPHERY SIDE
S604
S605
PERFORM CAV ROTATION CONTROL
S606
SWITCH STRATEGY
S608
PERFORM CLV ROTATION CONTROL
START WRITING DATA
S607
S609
HAS WRITING BEEN FINISHED?
NO
YES
TERMINATE RECORDING
S610